

REMARKS

Applicants respectfully request reconsideration of the present application in view of the reasons that follow. Claims 14-30 remain pending in this application and are submitted for reconsideration.

Rejection of claims 14, 16, 21-23, and 25-30 based on Dickey and Hartig

Claims 14, 16, 21-23, and 25-30 are rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over U.S. Patent 5,725,746 (“Dickey”) and U.S. Patent 5,262,032 (“Hartig”). For at least the following reasons, this rejection is traversed.

1. Dickey and Hartig do not teach or suggest all the features of claim 14

Claim 14 recites, among other things, a target assembly comprising a rotatable target tube; and a central body. The central body comprises interior to said tube: a bearing system for rotatably supporting said tube by said body, at least one rotatable coolant seal for supplying coolant to or extracting coolant from said tube through said body, and at least one rotatable vacuum seal for enabling a vacuum outside said tube. Dickey and Hartig do not teach or suggest this combination of features.

(a) Dickey and Hartig do not teach or suggest the bearing system of claim 14

Dickey and Hartig do not teach or suggest a bearing system interior to the target tube for rotatably supporting the target tube by the body. The PTO has asserted that the bearing 178 of Dickey is considered to be the bearing system of claim 14. However, the bearing 178 of Dickey is used for supporting the cooling water input tube 130. (Column 8, lines 44-46 of Dickey.¹) The cooling water input tube 130 is not a rotatable target tube. Indeed, the cooling water input tube 130 of Dickey is a totally different tube from the rotatable target tube, which is the cathode body 143. (See column 8, lines 40-41 of Dickey.²)” The cooling water input tube 130 of Dickey is not supporting the cathode body 143 via the bearing 178. The spindle 170 is supporting the cathode body 143. Because the cooling water input tube 130 of Dickey is not supporting the cathode body 143 via the bearing 178, the bearing 178 cannot be

¹ “Plug 160 is penetrated by tube 128, and plug 162, which has a bearing 178 for tube 130, is attached to drive spindle 170.” (Emphasis added.)

² “The cathode body 143 comprises tubular member 144 having a target material 142 at the outer surface thereof.” (Emphasis added.)

considered to be a bearing system interior to the target tube for rotatably supporting the target tube by the body.

In the event that the PTO is asserting that the cooling water input tube 130 is considered to be the rotatable target tube of claim 14, one of ordinary skill in the art would not consider the cooling water input tube 130 to be the rotatable target tube 143 because such a modification would change the function of the cooling water input tube 130, which makes such a modification non-obvious. MPEP 2143 provides that a rejection based on a rationale of combining prior art elements according to known methods to yield predictable results cannot be maintained if each element in the combination does not merely perform the same function as it does separately. In this case, the cathode body 143 of Dickey is the rotatable target tube while the cooling water input tube 130 provides cooling. The cathode body 143 of Dickey does not supply water and the cooling water input tube 130 is not sputtered. To interpret otherwise changes the functions of these components. Such a modification is not obvious and a rejection based on the modification is improper.

Furthermore, Dickey and Hartig do not teach or suggest a bearing system interior to the target tube for rotatably supporting the target tube by the body. The PTO has asserted that the bearing 178 of Dickey is considered to be the bearing system of claim 14. However, the cooling water input tube 130 is carried by the bearing 178. (Column 8, lines 44-46 of Dickey.³) The bearing 178 of Dickey is incorporated in the plug 162 which is attached to the drive spindle 170. (Column 8; lines 44-46 of Dickey.) The cathode body 143 is sealed by plugs 160 and 162 at the respective ends thereof (column 8, lines 42-44 of Dickey) and the bearing 178 is located external to the cathode body 143 on the outside of the plug 162 (Fig. 4 of Dickey). Accordingly, one of ordinary skill in the art would understand that the bearing 178 (which the PTO considers to be the bearing system of claim 14) to be exterior to the cathode body 143 (i.e., a rotatable target). As a result, the bearing 178 cannot be considered to be the bearing system of claim 14 because it is not interior to the cathode body 143 of Dickey.⁴

³ "Plug 160 is penetrated by tube 128, and plug 162, which has a bearing 178 for tube 130, is attached to drive spindle 170." (Emphasis added.)

⁴ If the PTO is suggesting that the cooling water input tube 130 is considered to be the rotatable target tube of claim 14 (which Applicants maintain it is not), the bearing 178 is also located exterior to this tube 130 as well.

It is noted that the spindle 170 of Dickey also cannot be considered to be the bearing system of claim 14. The cathode body 143 is sealed by plugs 160 and 162 at the respective ends thereof (column 8, lines 42-44 of Dickey) and the plug 162 is attached to the drive spindle 170 (column 8, lines 44-46 of Dickey), one of ordinary skill in the art would understand that the cathode body 143 (i.e., a rotatable target) is carried through the drive spindle 170, which is exterior to the cathode body 143. (Fig. 4 of Dickey.) Because the spindle 170 is not internal to the cathode body 143, the spindle 170 cannot be the bearing system of claim 14.

It is further noted that the end blocks 114 and 116 cannot be considered to be the bearing system of claim 14. Dickey states that the end blocks house the bearings for magnetron 140 (with its cathode body 143). (Column 8, lines 18-19 of Dickey.) The end blocks 114 and 116 are clearly mounted outside the cathode body. Thus, the bearings housed in the end blocks for the magnetron and its cathode body 143 are clearly external to the cathode body 143. Because the bearings for the magnetron are not internal to the cathode body 143, the bearings cannot be the bearing system of claim 14.

Because none of the bearing 178, the spindle 170, and the bearings inside the end blocks 114 and 116 can be the bearing system of claim 14, Dickey does not teach or suggest all the features of claim 14. Hartig does not cure the deficiencies of Dickey in this respect because Hartig does not teach or suggest a bearing system for rotatably supporting said tube by said body either. Accordingly, no combination of Dickey and Hartig discloses the bearing system of claim 14, and claim 14 is allowable over Dickey and Hartig.

(b) Dickey and Hartig do not teach or suggest the rotatable coolant seal and the rotatable vacuum seal of claim 14

Dickey fails to disclose a rotatable vacuum seal interior to the target tube for enabling a vacuum outside said target tube⁵ or a rotatable coolant seal interior to the target tube.

Dickey states that the cathode body 143 is sealed by plugs 160 and 162 at the respective ends thereof. (Column 8, lines 41-43 of Dickey.) These plugs separate the coolant

⁵ The PTO asserts that Dickey discloses "a rotatable vacuum seal for enabling a vacuum in the tube (col 8 lines 42-43: cathode body sealed by plugs 160 and 162; figure 5: sealing cap 214)." (Page 4 of the Office Action.) On its face, the analysis is not accurate because Dickey does not teach or suggest that the interior of the tube is under vacuum. Indeed, there is coolant in the tube during operation so there cannot be a vacuum in the tube.

inside the cathode body 143 from the vacuum outside of the tube cathode body 143. However, these plugs remain stationary relative to the target tube so they are neither “rotatable vacuum seals” nor “rotatable coolant seals.” The present application defines the meaning of a rotatable gas-to-coolant seal and a rotatable gas-to-vacuum seal:

With the rotatable gas-to-coolant seal is meant a seal that physically separates a gas containing space from a coolant containing space while enabling a rotary movement between both spaces.

Mutatis mutandis, a rotatable gas-to-vacuum seal is a seal that physically separates a gas containing space from a vacuum containing space while enabling a rotary movement between both spaces.” (Page 3, line 31 to page 4, line 3 of the application)(emphasis added.)

These explicit definitions define the meaning of the claims and are controlling, as outlined in MPEP 2111.01.⁶ Thus, the seals must separate two spaces from one another while enabling rotation between the two spaces. For example, “[t]he transition between the stationary and rotating part of the central body is ensured by means of a rotatable gas-to-vacuum seal, separating the vacuum section from the gas atmosphere while allowing for rotation.” (Page 7, lines 7-10 of the specification.) Thus, there must be rotation possible between two spaces over the seal.

The plug 162 of Dickey is a lid on the cathode body 143 and rotates with the cathode body. Accordingly, the plug 162 is a stationary sealing, not a rotatable seal, even though it rotates with the cathode body. Likewise, the plug 160 is penetrated by tube 128. This tube 128 is linked to the shaft 124 inside the end block 116 that is driven by the motor 118 through the gearbox 122. (Column 8, lines 23-39 of Dickey.) The cathode body 143 is driven by the tube 128 which is only possible if the connection between the tube 128 and the plug 160 is rigid! Accordingly, there is no relative movement between the plug 160 and the tube 128, thus making the plug 160 a stationary seal relative to the cathode body 143 and relative to the tube 128. Because plugs 160 and 162 of Dickey are stationary relative to the cathode body 143 and the tube 128, they cannot be either the rotatable coolant seal or the rotatable vacuum seal of claim 14.

⁶ “Where an explicit definition is provided by the applicant for a term, that definition will control interpretation of the term as it is used in the claim. *Toro Co. v. White Consolidated Industries Inc.*, 199 F.3d 1295, 1301, 53 USPQ2d 1065, 1069 (Fed. Cir. 1999) (meaning of words used in a claim is not construed in a “lexicographic vacuum, but in the context of the specification and drawings”).”

It is noted that Dickey states that the end blocks house the bearings, electrical and water connections for the magnetron 140 with its cathode body 143. (Column 8, lines 18-19 of Dickey.) This passage implies that the sealing functions of the water connections are interior to the end blocks 114 and 116. However, the end blocks are external to the cathode body 143, which result in these functions being all external to the cathode body 143. Column 8, lines 32-35 clearly states that “[f]luid connections 126 are also provided on end block 116 to introduce water into tube 130 and to flow water from tube 128 by means of seals (not shown) inside block 116.” (Emphasis added.) These coolant seals are clearly situated in the end block 116 and are completely exterior to the cathode body 143. Thus, the seals inside the end blocks cannot be the rotatable coolant seal and the rotatable vacuum seal of claim 14 because they are not interior to the cathode body 143.

Because none of the plug 160, the plug 162, and the seals inside the end blocks 114 and 116 can be either the rotatable coolant seal or the rotatable vacuum seal of claim 14, Dickey does not teach or suggest all the features of claim 14.

Hartig does not cure the deficiencies of Dickey in these respects. For example, Hartig does not disclose a rotatable coolant seal. The PTO asserts that Hartig discloses a rotatable coolant seal in Fig. 8 for tube section 61. (Page 3 of the Office Action.) Hartig states that “[t]he water infeed and water discharge can then be performed through a hub or through a tube section 61, see FIG. 8.” (Column 6, lines 25-27 of Hartig.) One of ordinary skill in the art would understand that the infeed of water into the additional target support tube 55 takes place through a water supply device 50 (compare Fig. 6 of Hartig.) This water supply device stays stationary. (Column 5, lines 61-64 of Hartig.) Hence the tubing going through tube section 61 remains stationary. As a result, any seal for the tube section 61 would be stationary and cannot be considered a rotatable coolant seal. Because Hartig does not teach a rotatable coolant seal, Hartig does not cure this deficiency of Dickey, and claim 14 is allowable for this additional reason.

Also, Hartig does not teach or suggest a rotatable vacuum seal or a rotatable coolant seal interior to a rotatable target tube. The tube section 61 of Hartig may have inner vacuum-to-gas sealings (not shown) around the feed and extract tubes inside the tube section 61 and outer vacuum-to-gas seals 13 and 14 (compare Figs. 1 and 3 of Hartig) outside the tube

section 61. However, these seals are situated close to the wall of the vacuum chamber, and hence, are outside to the target tube 53. Because these seals are outside the target tube, Hartig does not teach or suggest a rotatable coolant seal or a rotatable vacuum seal that is interior to the target tube. Accordingly, no combination of Dickey and Hartig discloses the rotatable coolant seal or the rotatable vacuum seal of claim 14, and claim 14 is allowable over Dickey and Hartig.

As outlined above, Dickey and Hartig do not teach or suggest the bearing system, the rotatable coolant seal, and the rotatable vacuum seal of claim 14. Nowhere is the problem that the end-blocks take up too much space (see page 2, lines 18-32 of the application) mentioned in Dickey and Hartig. Hence, one of ordinary skill in the art would not have a reason to modify Dickey and Hartig to arrive at the claimed invention because there is no incentive in Dickey and Hartig to take the inventive step of putting a bearing system, rotatable coolant seals, or rotatable vacuum seals inside the target body.

Thus, claim 14 is allowable over Dickey and Hartig.

2. Dickey and Hartig do not teach or suggest all the features of claim 23

Claim 23 recites, among other things, a target assembly comprising: a rotatable target tube; a first central body; and a second central body. The first and second central bodies comprise interior to said tube: a bearing system for rotatably supporting said tube by said first body or said second body, at least one rotatable coolant seal for supplying coolant to or extracting coolant from said tube through said first body or said second body, and at least one rotatable vacuum seal for enabling a vacuum outside said tube. Dickey and Hartig do not teach or suggest this combination of features.

(a) Dickey and Hartig do not teach or suggest the bearing system of claim 23

Dickey and Hartig do not teach or suggest a bearing system interior to the target tube for rotatably supporting the target tube by the first body or the second body. The bearing 178 cannot be considered the bearing system of claim 23 because the cooling water input tube 130 of Dickey is not supporting the cathode body 143 via the bearing 178 and the bearing 178 is exterior to the cathode body 143. The spindle 170 of Dickey also cannot be considered to be the bearing system of claim 23 because the spindle 170 is not internal to the cathode body 143. The bearings inside the end blocks 114 and 116 cannot be considered to be the bearing

system of claim 23 because they are not internal to the cathode body 143. Because none of the bearing 178, the spindle 170, and the bearings inside the end blocks 114 and 116 can be the bearing system of claim 23, Dickey does not teach or suggest all the features of claim 23.

Furthermore, the PTO considers the magnet array 208 and the cooling tube 210 to be the first and second central bodies, respectively, in the rotatable target tube of claim 23. (Page 3 of the Office Action.) However, none of the magnet array 208, the cooling tube 210, or the combination of both comprises a bearing system which is required by claim 23. The function of the magnet array is to generate a magnet field, not to provide rotatably bearing support. The function of the cooling tube is 210 is to supply coolant, not to provide rotatably bearing support.

Hartig does not cure the deficiencies of Dickey in this respect because Hartig does not teach or suggest a bearing system for rotatably supporting said tube by a body either.

Accordingly, no combination of Dickey and Hartig discloses the bearing system of claim 23, and claim 23 is allowable over Dickey and Hartig.

(b) Dickey and Hartig do not teach or suggest the rotatable coolant seal and the rotatable vacuum seal of claim 23

Dickey fails to disclose a rotatable vacuum seal for enabling a vacuum outside the target tube or a rotatable coolant seal interior to the target tube. The plugs 160 and 162 of Dickey cannot be either the rotatable coolant seal or the rotatable vacuum seal of claim 23 because they are stationary relative to the cathode body 143. The seals inside the end blocks cannot be the rotatable coolant seal and the rotatable vacuum seal of claim 23 because they are not interior to the cathode body 143. Because none of the plug 160, the plug 162, and the seals inside the end blocks 114 and 116 can be either the rotatable coolant seal or the rotatable vacuum seal of claim 23, Dickey does not teach or suggest all the features of claim 23.

Furthermore, the PTO considers the magnet array 208 and the cooling tube 210 to be the first and second central bodies, respectively, in the rotatable target tube of claim 23. (Page 3, of the Office Action.) However, none of the magnet array 208, the cooling tube 210, or the combination of both comprises a rotatable coolant seal and a rotatable vacuum seal which is required by claim 23. The function of the magnet array is to generate a magnet field, not to rotatably seal a vacuum or coolant. The function of the cooling tube is 210 is to supply coolant, not to rotatably seal a vacuum or coolant.

Hartig does not cure the deficiencies of Dickey in these respects. Hartig does not disclose a rotatable coolant seal because the tubing going through tube section 61 remains stationary; thus, any seal for the tube section 61 would be stationary and cannot be considered a rotatable coolant seal. Also, Hartig does not teach or suggest a rotatable vacuum seal or a rotatable coolant seal interior to a rotatable target tube because the seals are situated close to the wall of the vacuum chamber for the tube section 61, and are outside of the target tube 55.

Accordingly, no combination of Dickey and Hartig discloses the rotatable coolant seal or the rotatable vacuum seal of claim 23, and claim 23 is allowable over Dickey and Hartig.

Thus, claim 23 is allowable over Dickey and Hartig.

3. Dependent claims

Claims 16, 21-22, and 25-30 depend from and contain all the features of claim 14 or 23, and are allowable for the same reasons indicated above, without regard to the further patentable features contained therein. Thus, claims 16, 21-22, and 25-30 are allowable over Dickey and Hartig.

(a) Dickey and Hartig do not teach or suggest all the features of claim 16

In addition, claim 16 is allowable because Dickey and Hartig do not teach or suggest a drive means for rotating said tube relative to said body, said drive means being interior to said tube. The drive spindle 170 of Dickey in Fig. 4 is for transferring electric power not for making the target rotate. (See column 8, lines 35-39 of Dickey.⁷) Also, the spindle 170 is outside the cathode body 143. (Fig. 4 of Dickey.) The target tube is rotated through the action of the motor 118, the gear box 122, and the shaft 124 in the end block 116. (Fig. 4 of Dickey.) Clearly the motor 118 is outside the cathode body 143. Because the motor 118 and spindle 170 are outside the cathode body 143, Dickey does not teach or suggest the driving means of claim 16. Hartig does not cure this deficiency. Thus, claim 16 is allowable.

(b) Dickey and Hartig do not teach or suggest all the features of claim 25

Furthermore, claim 25 is allowable because Dickey and Hartig do not teach or suggest a drive means for rotating said tube relative to said first and second bodies, said drive means being interior to said tube. The drive spindle 170 of Dickey in Fig. 4 is for transferring

⁷ "A connection 154 at end block 114 is also provided to introduce electrical power to the magnetron. This is done through a brush contact within block 114 by way of a drive spindle 170."

electric power not for making the target rotate. (See column 8, lines 35-39 of Dickey.) Also the spindle 170 is outside the cathode body 143. (Fig. 4 of Dickey.) The target tube is rotated through the action of the motor 118, the gear box 122, and the shaft 124 in the end block 116. (Fig. 4 of Dickey.) Clearly, the motor 118 is outside the cathode body 143. Because the motor 118 and spindle 170 are outside the cathode body 143, Dickey does not teach or suggest the driving means of claim 25. Hartig does not cure this deficiency. Thus, claim 25 is allowable.

For at least these reasons, favorable reconsideration of the rejection is respectfully requested.

Rejection of claims 15 and 24 based on Dickey, Hartig, and Stuart

Claims 15 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dickey, Hartig, and U.S. Patent 4,824,540 ("Stuart"). For at least the following reasons, this rejection is traversed.

Claim 15 depends from and contains all the features of claim 14. As previously mentioned, Dickey and Hartig do not teach or suggest the bearing system, the rotatable coolant seal, or the rotatable vacuum seal of claim 14. Stuart does not cure these deficiencies. Because Dickey, Hartig, and Stuart do not teach or suggest all the features of claim 14, claim 14 and its dependent claim 15 are allowable.

Furthermore, Dickey, Hartig, and Stuart do not teach or suggest an electrical contact for rotatably connecting said body with said tube, said contact being interior to said tube, as recited in claim 15. The PTO asserts that Stuart discloses electrical contacts. However, even though Stuart is concerned with a cylindrical target tube in the form of the cylindrical shell 12, the target is clearly not rotating. There is also no need for the cylindrical shell 12 of Stuart to rotate around its own axis: the configuration of the magnetic fields is such that electrons will rotate around the target forming three ring-shaped plasmas coaxial to the axis of the target. (Column 3, lines 17-25 of Stuart.) As a result, although the contacts 32a-32d of Stuart are electrical contacts internal to the target body, they are not described as rotatable contacts. They are not referred to as brushes, nor are they identified to be able to provide rotatable contact. In addition, Stuart does not give the skilled person a hint to incorporate a rotatable electrical contact inside the target tube. The conclusion is that Stuart does not

disclose “an electrical contact for rotatably connecting said body with said tube, said contact being interior to said tube” as required by claim 15. Because Stuart does not teach or suggest these features, the combination of Dickey, Hartig, and Stuart does not teach or suggest all the features of claim 15, and claim 15 is allowable.

Claim 24 depends from and contains all the features of claim 23. As previously mentioned, Dickey and Hartig do not teach or suggest the bearing system, the rotatable coolant seal, or the rotatable vacuum seal of claim 23. Stuart does not cure these deficiencies. Because Dickey, Hartig, and Stuart do not teach or suggest all the features of claim 23, claim 23 and its dependent claim 24 are allowable.

Furthermore, Dickey, Hartig, and Stuart do not teach or suggest an electrical contact for rotatably connecting said first body or said second body with said tube, said contact being interior to said tube, as recited in claim 24. As previously mentioned, although the contacts 32a-32d of Stuart are electrical contacts internal to the target body, they are not described as rotatable contacts. In addition, Stuart does not give the skilled person a hint to incorporate a rotatable electrical contact inside the target tube. Because Stuart does not teach or suggest these features, the combination of Dickey, Hartig, and Stuart does not teach or suggest all the features of claim 24, and claim 24 is allowable.

For at least these reasons, favorable reconsideration of the rejection is respectfully requested.

Rejection of claims 17-19 based on Dickey, Hartig, and De Bosscher

Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dickey, Hartig, and U.S. Patent 6,375,814 (“De Bosscher”). For at least the following reasons, this rejection is traversed.

Claims 17-19 depend from and contains all the features of claim 14. As previously mentioned, Dickey and Hartig do not teach or suggest the bearing system, the rotatable coolant seal, or the rotatable vacuum seal of claim 14. De Bosscher does not cure these deficiencies. Because Dickey, Hartig, and De Bosscher do not teach or suggest all the features of claim 14, claim 14 and its dependent claims 17-19 are allowable.

Furthermore, claim 16, from which claims 17-19 depends, requires that the drive means is interior to the rotatable target tube. Claim 17 recites that “said drive means is an

electrical rotary motor” while claim 19 recites that “said drive means is a hydraulic rotary motor.” None of Dickey, Hartig, and De Bosscher teaches any motor within the rotatable target tube. The PTO asserts that “it would have been obvious...to place the motors within the cylindrical target tube because the rearrangement of parts is within the purview of one of ordinary skill. The placement of the motor within the tube would reduce the sputtering chamber size and cost.” (Page 6 of the Office Action.) This rejection is improper because no prior art or evidence has been set forth disclosing the motor in the rotatable target tube.

The Supreme Court in *KSR Int’l Co. v. Teleflex, Inc.*, 127 S.Ct. 1727 (2007) has not removed the requirement that the prior art reference (or references when combined) must teach or suggest all the claim limitations. Indeed, *KSR* emphasized cases where all features are known. Furthermore, the exemplary rationales listed in MPEP 2143 suggests that all elements (when the references are combined) need to be known in the art to support a conclusion of obviousness. Thus, the PTO is not relieved of its responsibility of finding prior art teaching or suggesting all the features of the claimed invention to establish a prima facie case of obviousness. The reliance on the mere arrangement of parts rationale is no substitute for finding prior art for establishing the claimed position of the motor within the rotatable target tube. This is especially true since a complete redesign of the device of Dickey and Hartig would be necessary to place a motor within the cathode body 143 of Dickey, which is flushed with coolant!

Furthermore, an electrical motor inside the cathode body 143 of Dickey (as suggested by the PTO in the rejection of claim 17) implies that: the motor must be mounted in a coolant tight enclosure as the coolant must be able to contact the whole inner surface of the target while the motor is inside the target, the motor must be electrically insulated from the negative high potential of the target, and the motor in the central body must be connected mechanically to the target. Nowhere in De Bosscher or Dickey is a hint given as to how to accomplish this substantial redesign of Dickey. Thus, one of ordinary skill in the art would not be given enough information to make the proposed changes suggested by the PTO.

Because Dickey, Hartig, and De Bosscher do not teach or suggest a motor being interior to a rotatable target tube, claims 17-19 are allowable.

For at least these reasons, favorable reconsideration of the rejection is respectfully requested.

Rejection of claim 20 based on Dickey, Hartig, De Bosscher, and Miyajima

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dickey, Hartig, De Bosscher, and JP 59215484 (“Miyajima”). For at least the following reasons, this rejection is traversed.

Claim 20 depends from and contains all the features of claim 14. As previously mentioned, Dickey, Hartig, and De Bosscher do not teach or suggest the bearing system, the rotatable coolant seal, or the rotatable vacuum seal of claim 14. Miyajima does not cure these deficiencies. Because Dickey, Hartig, De Bosscher, and Miyajima do not teach or suggest all the features of claim 14, claim 14 and its dependent claim 20 are allowable.

Furthermore, claim 16, from which claim 20 depends, requires a drive means interior to the rotatable target tube. Claim 19, from which claim 20 also depends, recites that “said drive means is a hydraulic rotary motor.” None of Dickey, Hartig, and De Bosscher teaches any motor within the rotatable target tube. Miyajima does not cure these deficiencies. Because Dickey, Hartig, De Bosscher, and Miyajima do not teach or suggest all the features of claim 19, claim 19 and its dependent claim 20 are allowable.

Furthermore, Dickey, Hartig, De Bosscher, and Miyajima do not teach or suggest that said hydraulic rotary motor is driven by the coolant. Miyajima describes a configuration wherein the magnet array is circulated by the coolant, not a target tube. (Abstract of Miyajima.) Miyajima does not teach or suggest the use of the coolant pressure for energizing the movement of the target tube. Because Dickey, Hartig, De Bosscher, and Miyajima⁸ do not teach or suggest that a hydraulic rotary motor is driven by the coolant, claim 20 is allowable.

For at least these reasons, favorable reconsideration of the rejection is respectfully requested.

Conclusion

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application is respectfully requested.

⁸ Furthermore, the fact that four different documents have to be combined in order to arrive at the subject matter of claim 20 is itself an indication that claim 20 is not obvious.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing or a credit card payment form being unsigned, providing incorrect information resulting in a rejected credit card transaction, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorize payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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